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Report

HIGH SCHOOL NEWS SERVICE

JANUARY 1976

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Report

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HIGH SCHOOL NEWS SERVICE REPORT JANUARY 1976 VOL. 19 NO. 4

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The purpose of REPORT is to inform young people of their responsibilities, benefits and opportunities in the Armed Forces of the United States. It also serves the goal of keeping the public informed about its military services.

The Secretary of the Navy has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication approved by the Director of the office of Management and Budget, 8 August 1975.

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Deputy Director . . . . . .
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Technical Sergeant P.B. Schuyler, USAF
Layout Editor/Artist . . . . . .
. . . . . Photo-Journalist 2d Class C.L. Spaulding, USCG

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USCG . . Chief Warrant Officer J. Greco
USN . . . . . .
Senior Chief Journalist T.J. Reilly
USMC . Gunnery Sergeant J.A. Heseltine

COVER: With the icebreaker WESTWIND in the background, a Coast Guard Marine Science Technician sets up a spectro-radiometer for a civilian scientist's tests. CG seaman-divers wait at the ice's edge to assist in underwater work.

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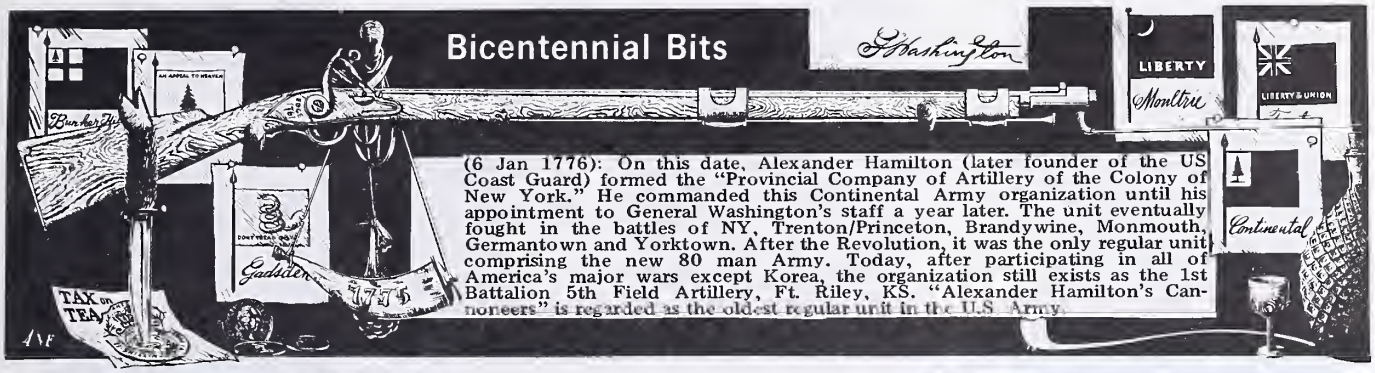
Counselor's Corner

REPORT is available free of charge only through normal distribution from the Department of Defense High School News Service, Bldg 1B, Great Lakes, IL 60088. To be placed on the mailing list, increase the monthly number of magazines received or obtain additional copies of a particular issue, a written request should be made to the Director at the above address. REPORT is available to school and college guidance offices, libraries, career centers, ROTC units and public libraries or any civilian agency which deals with counseling young people on vocational and educational opportunities.

At the present time, REPORT reaches over 15,000 high schools, 861 junior high schools, 765 colleges and over 900 Junior and Senior ROTC units. Most American overseas dependent schools also receive the magazine. Monthly distribution is over 50,000. Stories in REPORT are written by staff members with few exceptions. Mailing is done by HSNS while printing is accomplished by a contracted civilian firm. HSNS has been in operation since 1956.

The Armed Forces Vocational Testing Group (AFVTG) has distributed a reference document entitled "DoD Military-Civilian Occupational Source Book." This publication lists job descriptions and qualifications for enlisted military occupations in all five Armed Services. Where possible, it equates military jobs to civilian counterparts. The Source Book was complied by AFVTG in conjunction with the Departments of HEW, Labor, Transportation and Defense. The Testing Group is a joint service agency which manages the DoD High School Testing Program and directs administration and research on the Armed Services Vocational Aptitude Battery. For more information on the Book, write: Armed Forces Vocational Testing Group/RDX, Universal City, TX 78148; write the Testing Group at Randolph AFB, Tx 78148 for information on the Aptitude Battery.


Bicentennial Bits
(6 Jan 1776): On this date, Alexander Hamilton (later founder of the US Coast Guard) formed the "Provincial Company of Artillery of the Colony of New York." He commanded this Continental Army organization until his appointment to General Washington's staff a year later. The unit eventually fought in the battles of NY, Trenton/Princeton, Brandywine, Monmouth, Germantown and Yorktown. After the Revolution, it was the only regular unit comprising the new 80 man Army. Today, after participating in all of America's major wars except Korea, the organization still exists as the 1st Battalion 5th Field Artillery, Ft. Riley, KS. "Alexander Hamilton's Cannoneers" is regarded as the oldest regular unit in the U.S. Army.
LIBERTY
Continental

ALERT.... it sends a crew scrambling....

MAST

To save a life

by d.m. ryan

photos by SP4 Pat Colburn and Ft. Knox PAO

.... to man their medical evacuation helicopter.

It was a cold, bleek Christmas morning in Kentucky. While a light snow fell, a sleepy-eyed sergeant was suddenly startled by the loud ringing of a telephone in his operations office.

The call triggered a flurry of action. An Army warrant officer took notes and referred to local maps while his crew scrambled to man their medical evacuation helicopter. Within minutes, the craft was airborne, heading to the site of an auto accident.

State police at the scene guided the helicopter in and explained that a family of four was critically injured.

CO-PILOT (above) plots location of an accident on the map board in a MAST operations office.

The medics worked feverishly over the victims, then helped place them on stretchers and into the aircraft.

Crew chief Charles Wilkinson held a four year old girl in his lap, wrapped in a blanket. She had several broken bones and was in poor condition. As he tried to protect the child from the cold air, she reached under the blanket and produced a crushed candy cane. She wanted to share her Christmas candy with the chief, even as shock set in. Later at the hospital, the girl was treated and survived the ordeal.

This is but one of about 300 mis-

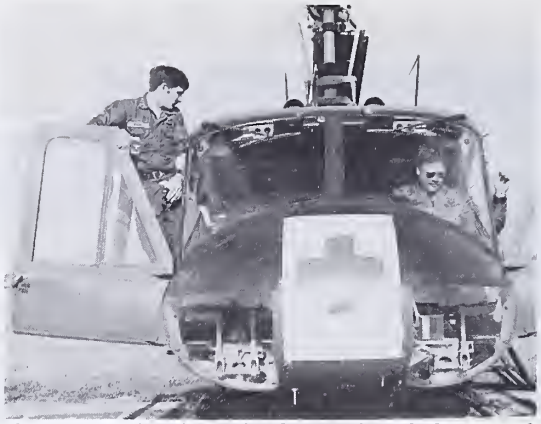
LOCAL police and fire authorities help a hospital attendant and MAST crew members move an injured child into the hospital. (Ft. Sam Houston photo)

sions that have been participated in by members of the 431st Medical Detachment, Ft. Knox, KY. As with over ten similar units nation-wide, they are part of a joint military/civilian program entitled MAST - Military Assistance to Safety and Traffic. The above related story is part of what has become daily routine for program participants.

Basically, MAST was created to coordinate Army and civilian emergency medical service systems in an attempt to save lives. In conjunction with state and local law enforcement agencies plus civilian hospital and health authorities, Army air medical evacuation units help move critically injured people to nearby hospitals quickly.

MAST is more than just aircraft, hospitals and emergency equipment. It is people. And the Ft Knox unit is typical of similar Army units at other posts like Ft. Lewis, WA and Ft. Sam Houston, TX. It is a 24 hour a day, seven day a week operation. Six crews are available with one always on three minute alert and one always on a 30 minute back up status. Primary missions include aiding and evacuating highway accident victims; helping victims of heart attacks or gunshot wounds; inter-hospital transfers of critically ill patients; pick up and delivery of urgently needed blood, medicine or human organs for transplant; and transfer of premature infants to special hospitals.

Each member of a MAST helicopter crew is highly trained and skilled at his or her job. Most have worked in other Army medical or aviation positions before being selected or volunteering for duty with these unique organizations. Every participant must be trained to meet the recommended proficiency standards of the National Academy of Science as set in the basic Emergency Medical Technician - Ambulance Training Course. MAST participants are by necessity, top performers in their specialties.



CREW chief, left, and pilot ready a helicopter for take-off.

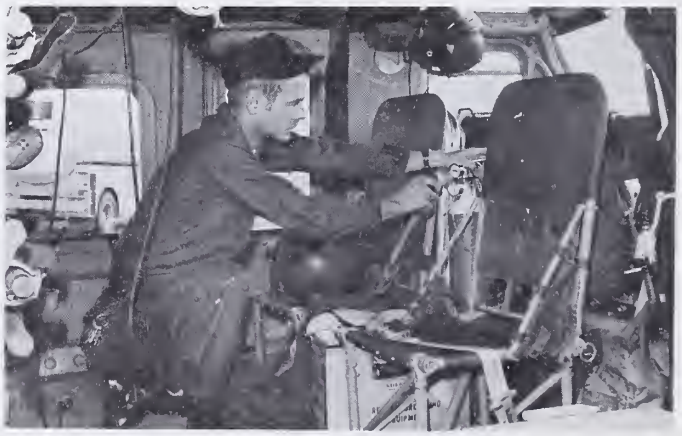
CPT Linda Horan (right) awaits word to depart on a MAST mission.

A helicopter crew in this program consists of four people - two pilots (commisioned or warrant officers), a medic and a crew chief. Obviously, pilots are critical to the success of a mission. Usually they are Medical Service Corps aviators with medical evacuation experience or warrant officers with air cavalry experience.

Initial flight training for these individuals is received during 36 weeks at Ft. Wolters, TX and Ft. Rucker, AL. Later they participate in a 4-5 week Essential Medical Training for Army Aviators course at Ft. Sam Houston, TX. This doctor-taught instruction prepares pilots to assist in patient care, if necessary, on a mission. Also, it helps them determine a patient's condition. Such a determination is key to chosing at which hospital the injured person can best be treated.

Pilots have other responsibilities in addition to assisting the medic or selecting a receiving hospital. They make the decision to fly or cancel a mission based on weather or landing zone conditions. Such a determination can effect the lives of crew and patients as well as the safety of the aircraft. It is also the pilot's job to maintain radio contact with police on the ground and officials at the hospital to ensure a smooth operation, free from complications or surprises.

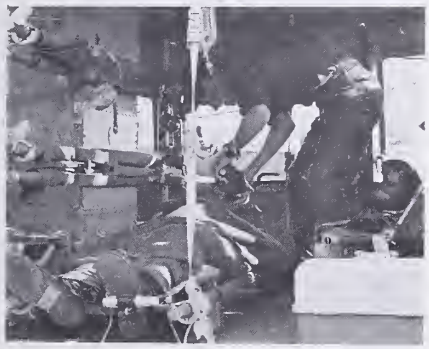
Captain Stan Krol, a veteran of over 80 missions at Ft. Knox, recalls an incident where a premature baby stopped breathing in flight. The medic performed mouth-to-mouth resuscitation and saved the infant's life. Captain Linda Horan, a MAST pilot at Ft. Benning, GA remembers her first landing on the roof of a medical center. Spectators were as amazed to see a woman pilot as she was to have landed on that authorized pad.



Medic inspects rescue breathing equipment between missions.

The next key members of the MAST crew are the medics. They are responsible for performing the necessary first aid and medical treatment at the accident scene - directly resulting in saving lives or limbs. Medics attend ten weeks of medical instruction at Ft. Sam Houston after basic training. This prepares them for applying splints, giving injections, using components of the medical aid kit, dressing and bandaging wounds, helping victims of breathing or heart conditions and administering all elements of first aid.

Due to the conditions under which they work, medics must be emotionally stable, have no psychiatric disorders and be able to affect good interpersonal relations with their patients. Medics usually reflect the traits of initiative, attentiveness and dependability.



MEDIC administers first aid to a patient.

While most medics have served in Army medical units earlier, they are able to learn valuable medical and operational procedures from fellow crew members who have flown MAST missions. In return, they bring new techniques and ideas to the job. Education is a continual thing. For example, at Ft. Knox, Sergeant Charles Butkus of Chicago, has had the chance to attend a one-week hospital course on pediatrics, baby care and delivery. He has learned to operate an isolift, used in transferring premature babies from one hospital to another. Also, he and other crew members attended an Emergency Medical Training course for 12 weeks at the University of Kentucky.

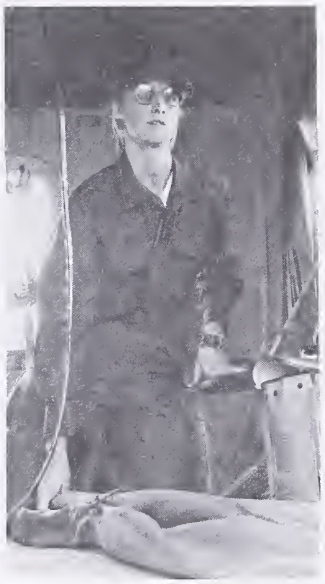
Often during missions, the medics are in communications with doctors at the receiving hospital. Data on the patient is forwarded while instructions on possible medical care are received. Such work can mean life or death for an accident victim or a premature baby.

The final crew member is the crew chief. This individual is responsible for the maintenance and safety of the aircraft and its equipment, as well as for pre/post-flight inspections of the craft. During operations, the chief may handle the radios or assist the medics in patient care.

Recently, PFC Connie Higgins of Gray, KY became the first woman MAST crew chief at Ft. Knox. As with most other members of her job skill, she attended the aviation maintenance course at Ft. Rucker after basic training. Then she worked as a mechanic before being selected for her new job. She was chosen based on motivation, ability and expertise in her field.

PFC Connie Higgins works on the engine of her helicopter

While Higgins' medical training was originally received on the job from medics and other crew chiefs, she will eventually attend local hospital courses and the University of Kentucky medical instruction mentioned earlier. Such training is necessary if she is to assist the medic. Often, the crew chiefs will spend their own free time visiting hospitals and trying to learn all the medical skills possible.



Higgins aids a medic in loading stretchers back onto her aircraft following a mission.

Members of the MAST program must be dedicated professionals. If an individual cannot meet necessary standards, he or she is removed. Crew members will not accept less than total commitment and top performance from their fellow workers. They realize that both patient's lives and the prestige of the unit and the Army is at stake daily.

Hours may be long, but morale is high in these units. One reason is the fact that the results of MAST participation can be seen immediately - lives saved, blood delivered or patients given comfort. If crew members had a choice, most would remain in MAST units. However, they must eventually return to performing their tasks in normal Army medical or aviation units.

The close-knit MAST crews are characterized best by their professional attitudes and manner of performance. To reach their level of professionalism takes much dedication and training. Those people who have benefited from MAST crew member's skills will varify that the training was worthwhile. There might seem to be little reward for a night's work, but the big bonus comes in continued life for an accident victim or a premature baby.

Electronic Warfare Technician -

by d.m. ryan

Electronic warfare. The term conjures up visions of Jules Verne's Twenty Thousand Leagues Under the Sea, War of the Worlds or a modern TV science fiction drama. But in reality, tomorrow is here now in the form of electronic warfare. And, it's key to the Navy's future in conjunction with a more traditional warfare system.

The concept used in this form of warfare is based on very sophisticated principles and equipment. To operate the machinery in its combat environment takes a highly educated and trained individual. Such a person is the electronic warfare technician(EW).

To reach the professional state of readiness needed, he must attend a rather lengthly training cycle. It really begins in high school where math, physics and basic electricity courses are usually taken. After Navy basic training, the potential EW attends his first technical school – Basic Electricity and Electronics.

Since this program operates on a self-pace system, the electrically minded student can progress through at a rapid rate. Covered are such topics as fundamentals of electricity, circuits, test equipment, math formulas and electronics. Advanced educational concepts and media are used to present subject material.

The next step in the EW progression is advanced training at Corry Station, Pensocola, FL. Recently, the Navy consolidated most of its electronic warfare training there. Thus, only the most modern classrooms, laboratories, equipment and facilities are available to aid student instruction. On an average day, the school has about 800 trainees. This coupled with the fact that there are some 175 instructors, means valuable, individual attention for each student.

The length of time spent at Corry depends on the career option selected – four year or six year obligation. Those taking the first program receive 20 weeks of training with emphasis on systems operation and only a touch of preventive maintenance instruction. The six year selectee is ensured of 48 weeks training, not only in operation, but in technology and equipment repair.

EW sits before his console, monitoring incoming electronic signals. Using the audio sounds received through his headset and the visual pattern on his console scope, the technician will determine the source and location of the signals. (Photos by PH3 T. Grenwright, USN)

While the second program provides more detailed training and maintenance work, either course prepares the

Ears of the modern Navy

graduate for the responsibilities and opportunities available as an electronic warfare technician. Advancement is excellent in the field due to the fact that it is only 75 percent filled Navy-wide.

And for those looking to future civilian jobs the market for people with electrical skills and experience is outstanding. Former EWs may find work as technicians in test equipment, electronics or calibration; or as electricians, computer programmers and maintenance personnel, telephone communications technicians or specialists with any one of the large firms which manufacture Navy electrical equipment.

It may appear up to this point that EW are full time career students. But the work and satisfaction for them really begins after Corry and on their first shipboard assignment. Be it a frigate, destroyer or carrier, action for an electronic warfare technician is at sea. Since women may not now serve aboard combat craft, where most of the EW positions are located, there are no females in this career field, yet.

Stationed aboard ship anywhere in the world, the technician is challenged to bring his training to bear. Since some of the career field and its related equipment is classified, a detailed job explanation concerning the EW is difficult. But basically, he operates monitoring equipment which is used to detect electromagnetic signals. These intercepted electronic emissions are then evaluated to determine source – surface, airborne, missile or natural atmospheric.

Once the technician has identified the source, he fixes its location and speed, determines the threat posed and the best defensive maneuver to take in case of an attack. This data is passed to the tactical officer in the ship's Combat Information Center (CIC).

Usually, the EW is located in the CIC. There, seated before his receiver console, headset in place, his world of electronic warfare blossoms. With beads of sweat lining his brow, face reflecting the strain of anticipation, he waits. . . . and. . . . listens.

Now the EW does not exist in a vacuum. Besides knowing his job, he must be familiar with the ship's capabilities, operation of the CIC and capabilities/characteristics of enemy equipment. When he monitors the right signal ... snap... all of this information must come together and form a logical conclusion.

No longer are binoculars or radar enough to detect the complicated weapons systems used today. Now, sophisticated electronic equipment, manned by trained, professionals is needed. Hence, as reliance on electronic gadgetry increases in the world of combat, so the importance of the EW increases correspondingly.

The ability to detect and defend against enemy threats is a key to future Navy success. And it is the electronic warfare technician, seated at his console – waiting, listening – who may determine the course of future events. Because this individual, located in what was once a science fiction world, is now the ears of the U.S. Navy.

Combat Information Center (CIC) personnel plot ship locations. They also will post data provided by the EW technician on their charts.

Coast Guard Scientists at Sea

by d.m. ryan

Official Coast Guard Photos

MSTs depart fore and aft from the icebreaker GLACIER to begin experiments.

Glasses of a cold Science Technician reflect a nearby icebreaker.

"We sailed at 4 P.M., April 1st and for the first three days out struck miserable weather. Even some of the officers were sick and any work on deck was out of the question.

"My job was to perform investigations to determine the distribution of ice on and near the Grand Banks and the conditions which control its movement.

"My working spaces were to be the sick bay (hospital room) or other suitable quarters on board. I was extended all available facilities consistant with the other duties of the ship."

Thus began the 1914 diary of a scientist aboard the Coast Guard's first cutter conducting an oceanographic cruise. While weather conditions in the North Atlantic have not changed, missions, methods and the expertise of Coast Guardsmen doing scientific research have been altered.

In 1968, the Coast Guard combined the scientific fields of oceanography and meteorology to form the Marine Science Technician (MST) rating. Oceanography deals with sea phenomena, blending physics, geology, biology and chemistry with bacteriology, acoustics, sedimentation, hydrodynamics and optics. Meteorology is concerned with atmospheric phenomena including weather and climate. Since a great part of CG operations occur in, on or above the sea, the establishment of the new field was reasonable.

Experience has shown that most MSTs began their training with high school courses in algebra, trigonometry, chemistry, physics and typing. Most had instruction or experience in meteorology, oceanography or astronomy. Such background developed into an interest for work as an MST.

The training of MSTs is critical since the seas and skies that they study are the media of operation for the Coast Guard's ships and aircraft. Upon completion of recruit training, future science techs enter a 16 week course at the Coast Guard Reserve Training Center, Yorktown, VA. For

Radiosonde ballon is released to gather weather data at upper altitudes.

the scientifically minded, the instruction is similiar to college level work and is divided into two parts.

First, basic weather operations are studied. Important are the aspects and designs of weather maps, including how to draw intricate weather patterns. Next mastered are pressure areas, wind velocities, humidity and cloud formations and finally the inter-relation of these phenomena. At this point, the student no longer needs the TV news to tell him the upcoming weather.

Phase two of the course concerns oceanography. The trainee moves from the characteristics of currents and the various aspects of ocean zones and depths, to the use of sensitive scientific equipment designed to measure water salinity and temperature at great depths. He learns to conduct water analysis and then record the findings as well as to operate all equipment used in experiments.

As his training nears completion, the student begins to understand the complex relationships between the sea and the atmosphere and why certain cycles occur.

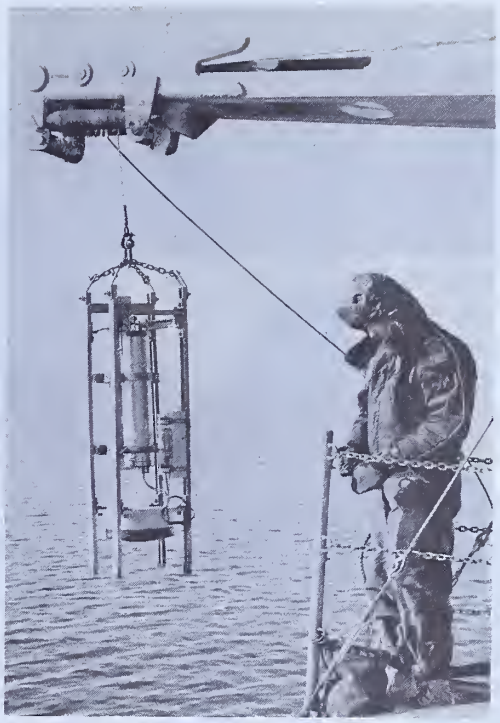
With all of this newly acquired knowledge, the MST is now ready for assignment to a cutter, research ship, icebreaker or shore station. At these locations, he will be given full opportunity to practice his trade. But, since the majority of positions requiring his skills are aboard ship, sea duty is a likely prospect.

A myriad of tasks are performed by the science tech. In connection with the CG's International Ice Patrol mission, the new scientist can be found conducting continuous tests. Soundings and water samplings are obtained using fathometers and special electrical measuring devices. These accurately and constantly read salt, temperature and depth levels of the ocean. Exactness means measuring to a thousandth of a degree in temperature and a millionth of a grain of salt because such minute differences effect ocean currents and thus ice flow.

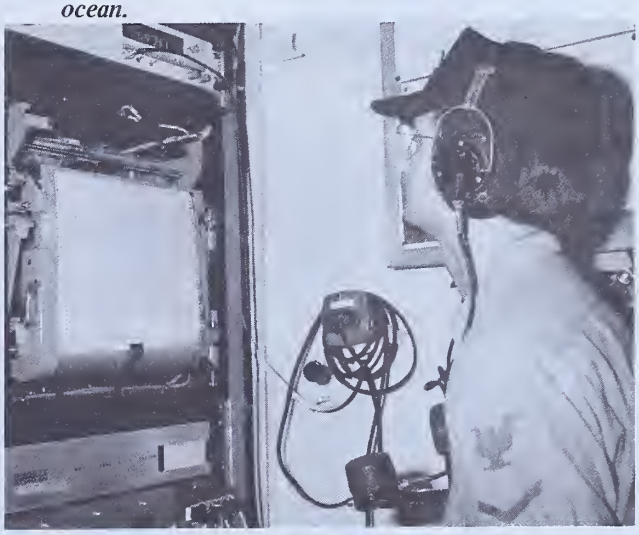
Computers record the collected data which is forwarded to Ice Patrol Headquarters. Aboard a research ship like the EVERGREEN, dry labs are available for storing test equipment and computers. Also, wet labs allow space for drawing and examining water samples.

Often, the technician must leave his ship in order to conduct tests. In sub-zero temperatures, swirling seas and high winds, the MST may venture out onto an iceberg and conduct first-hand experiments. He studies physical properties, erosion, water and air temperatures in and around the berg, habits of birds and seals in relation to the ice and other fascinating details concerning the ice monsters.

All of this information is combined with ocean currents; location, speed and flow of icebergs; and wind data in order to compile charts. These charts are then used to guide ships, thus preventing disasters. The studies also benefit fisheries personnel, oceanographers and scientists world-wide.

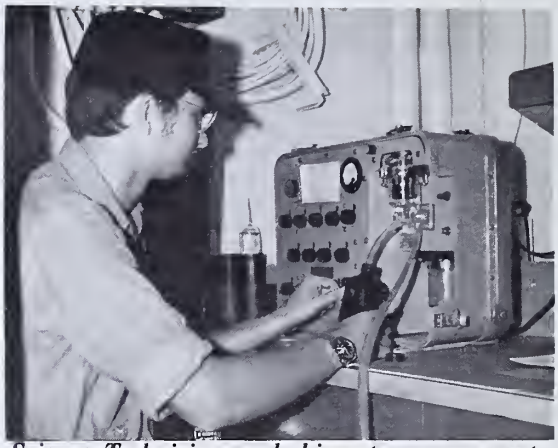


A Salinity-Temperature-Depth (STD) Sensor is prepared for lowering by crane into the ocean.



MST operates a STD Sensor recorder in the laboratory of a cutter. To ensure all necessary data is gathered, he communicates with the Technician on deck who is controlling the sensor.

A technician monitors the descent of test equipment into the ocean, while an assistant stays in communications with the lab MST.



Science Technicians and shipmates prepare water sampling equipment for operation (top left). Sampling bottle is guided into the ocean by crane (left). Gathered samples of sea water are then analyzed for salt content by an MST using a salinometer.

Another field in which the marine science technician assists is pollution control. Through water tests and airborne radiation surveys, the MST can determine pollution levels in harbors and off-shore areas. Such data is used by civilian organizations as well as the Coast Guard's "Strike Teams" (used to fight oil spills).

On a daily basis, many technicians provide weather briefings and forecasts for use by pilots and navigators. Much of the information they gather is of aid to the National Weather Service, Department of Defense, CG Rescue Coordination Centers and commercial or private ships. Weather data and oceanographic charts are invaluable for use by the Search and Rescue units of the Coast Guard. Up-to-date reports often aid in successful life-saving actions. Although he does not get credit, the MST's role is important in such events.

The world of the technician is not limited just to CG activities. He often works in conjunction with civil and international scientific groups. In one program, daily sea current charts are complied for the Atlantic coast. Complex survey equipment such as infrared image producing satellites are used. MTSs participated in Operation "TEKTITE" (1969–1970) which supported man's first attempt at living for long periods in underwater habitats.

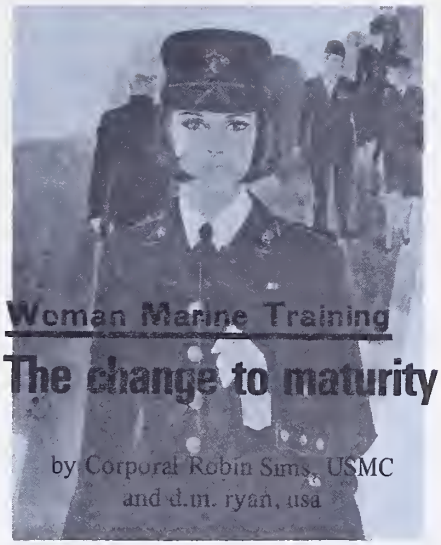
Over three-fourths of the earth's surface is covered with water; 100 percent with atmoshpere. These two environments play key roles in the lives of all people as well as in the missions of the Coast Guard. Based on these facts, the future appears bright for marine science technicians.

Advancement opportunities for the professional MST are excellent and his skills are as desired in the civilian community as they are in the CG. Future techs will be concerned with mineral and food resources of the oceans, methods of weather control, acoustic properties of water in regard to undersea warfare and the spreading of nuclear radiation through water. Clearly, the need for the MST can only increase.

Although intricate and complex labor saving devices are making the techs job easier, these devices increase the need for a high degree of skill and knowledge on the operator level. Technology may advance, but as long as the Coast Guard is needed to protect those in danger on the oceans, men can never be replaced.

In meeting the responsibilities and missions, the marine science technician will continue to face gales, fog, ice and other dangers of the sea and sky – sometimes "making any work on deck out of the question."

At left, civilian scientists work with CG Marine Science Technicians, inspecting organisms gathered on an epibenthic sled from the ocean's bottom. Storm and ice (right) often "make any work (scientific) on deck, out of the question."



Woman Marine Training

The change to maturity

by Corporal Robin Sims, USMC
and d.m. ryan, usa

A slender, light-haired woman sat in the Savannah airport lounge slowly stirring and gazing into her coffee cup. Sparkling eyes reflected a feeling of far off thought and concern. This was in contrast to a somewhat pensive facial expression.

When questioned by an apparently new acquaintance, she revealed that a flight would soon be taking her home to Illinois. Then the comment was heard, "I had no idea I would change and although I am basically the same person, I have become more mature. I guess you could say I've learned to give as well as take in my life."

The young woman was not a runaway, but a Marine heading home for a short vacation before reporting to her first assignment in Japan. Her comments were in regard to recent experiences in the Marine Corps' recruit training.

While not bubbling over in expressing opinions about the training, she referred to the period as one of awakening and preceiving a new world. She felt that the training could not easily be explained to someone outside the Corps, but offered to do her best.

The Marine Corps saw the training as a transformation, into the non-combat military way of life, of women – the new world encompassing discipline, respect, confidence and poise, esprit de corps and devotion to duty and country.

Most of the trainees saw it as an eight week period of apprehension, anxiety, friendships, learning, growing, frustration, doubt, decisions, new beginnings, inner struggle, laughter and self-satisfaction. In one word, recruit training for women might be described as emotion or possibly change. Both occur usually.

When the new Women Marine (WM) recruits arrive at the training battalion headquarters, Parris Island, SC, they immediately begin a four day orientation period known as "forming."

During this period, the women are prepared for the eight week training cycle ahead. Forming allows the recruits to be issued clothing and equipment and buy necessities at the post exchange store. It also is used to present lectures on Marine customs and courtesies and the Uniform Code of Military Justice (the military's legal system). Finally, necessary paperwork is completed and aptitude tests are taken.

After the orientation period, the Drill Instructors (DI) take over. For the next eight weeks, they will be responsible for overseeing the complete training of the Women Marines recruits. From 5 A.M. until 9 P.M. daily, the DIs work to instill spirit, discipline, teamwork and a desire to excel in each recruit. Their primary job is to ensure that at the completion of training, every woman is prepared to be a Marine.

Recruits receive required innoculations early. (All photos by CPL Sims)

On the first day of "forming" (above), recruits check the contents of a necessary-items bag just issued. Later, in the week, they receive instruction on hair care (left). They also are given the chance to purchase wigs.

The training cycle is divided as follows: 248 hours of classroom instruction, 50 hours of drill and 50 hours of physical training. Academic sessions cover basic military subjects such as uniform regulations; military law; first aid; land navigation; nuclear, biological and chemical defense; water survival and life-saving techniques; personal development and basic administration procedures.

In addition to classes presented by the special subjects instructors, the recruits receive guest speaker lectures on topics which include health education, character guidance and leadership qualities. Such events show the Corps' concern for developing the woman in total, not just militarily.

Self-pride, dignity and cleanliness as well as discipline are stressed through the medium of appearance – both in self and living quarters. Daily inspections ensure that much concern is afforded this subject.

Throughout the training, the DIs continue to be task masters. But they also provide recruits with guidance, counseling and aid in solving personal problems. Twelve women drill instructors at Parris Island are in charge of four platoons of about 65 trainees each. This helps ensure that close, personal attention can be give to each recruit during training.

Thousands of women graduate from Marine recruit training yearly. It is not the ghastly, dehumanizing, harassing experience some would make it out to be. On the other hand, make no mistake, it is demanding. Certain standards must be met in order to graduate. Some of the requirements are a 70 percent academic average, passing of the physical fitness test (flexed-arm hang from a horizonal bar, bent-knee sit up and a 1-1/2 mile run) and standing well in the individual performance evaluation. Of the 65 women in a platoon, usually less than 11 percent fail to meet necessary standards.

Many recruits relate that attitude – mind over matter – is the key to completing the training cycle. Do not become depressed or quit. No problem is too great that it cannot be faced and overcome, especially when other trainees are always ready to help.

At the airport lounge, the young woman speaking, suddenly stopped and contemplated for a moment. Then she continued, "Eight weeks seemed like a long time at first, but they passed quickly. At the graduation review parade, I was proud and happy – also a bit sad. I guess it's because I'll miss many of the girls. You get to feeling that way when you've completed an event which effects and changes your life."

As she finished her coffee, the announcement came, "Flight 217, Savannah to Atlanta and Chicago, now boarding at Gate 3."

Bidding farewell to her companion, she appeared to smile and brighten up, an air of self-confidence apparent. Then she moved quickly off to catch her flight. She had departed home an average, 18-year old high school girl just graduated, and now she was returning – changed – a more mature person and a Woman Marine.

(Above) Physical fitness training includes jogging by platoon. (Below) Recruits test their masks during a gas chamber exercise. This event occurs in week six of training.

Just prior to graduation, a recruit has her Marine emblem pinned on by a DI. This ceremony marks the point where the women officially become Marines.

Boom operator

Pumping gas at 20,000 feet

by d.g. francis
photos by c.l. spaulding

Wesley May never did get comfortable sitting in the back seat of the open cockpit Lincoln Standard airplane while pilot Frank Hawks made a successful take-off. He had a five gallon can of gasoline strapped to his back.

Once airborne, May moved cat-like to the end of his aircraft's wing and then made his way to the wing skid of another plane. It had been maneuvered up beside the Lincoln. May next climbed to the neighboring craft's engine, poured the gasoline into its tank and thus concluded the first "air-to-air" refueling of an airplane. The date was 12 November 1921.

In 1953, two sergeants, Glen Wills and Victor Ellis, met for the first time at Bergstrom AFB, TX. "Shakey" Wills was an instructor in the boom operator's course and Ellis had just joined that career field. Wills was to check Ellis out on a mission involving the refueling of a flight of F-86G aircraft. Before the day was over, Ellis qualified as a boomer - having made 110 contacts (connecting the tanker with the receiving aircraft). He later commented, "Shakey made sure I knew what I was doing up there."

Recently, Shakey Wills recounted how things were done in the early days of "boomer" life, 1951 style. "We didn't have the hard booms you have today," he said, "but used 150 feet of hose which we let out to the receiver aircraft.

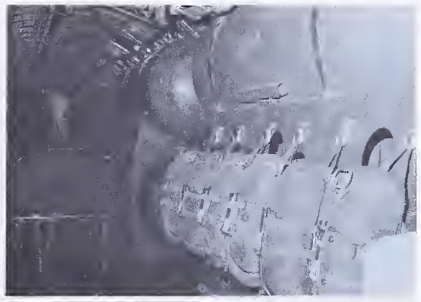
"The refueling procedure involved a lead weight on a cable attached to the hose and a large 'dishpan' on the refueled bomber. The bomber's waist gunner would let the pan out on a steel cable and the wind would pull it back behind the plane. The tanker would fly alongside and then up and over the bomber. The lead on the hose would be pulled into the pan and the gunner would reel the hose in, connect it and let the tanker crew know he was ready to take on fuel. When the gas was pumped, the hose would be disconnected and the boomer would just reel it back into the tanker. Simple."

More than 20 years after Victor Ellis had his check-out, son Dan walked to a jet KC-135 tanker (a converted Boeing 707 jet liner) on the Dyess AFB, TX flight line. He was about to continue a family tradition by becoming a boomer. Shakey Wills was on hand as instructor and Dan's dad had driven up from San Antonio to observe the event.

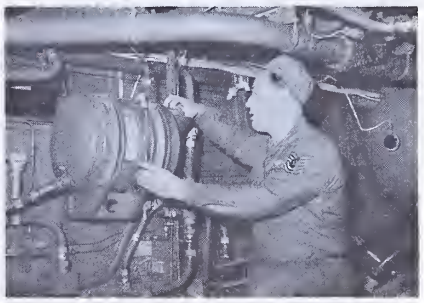
Air refueling has come a long way since the wing walk in 1921. In the old days, it was a simple matter of reeling out a hose to complete an operation. But today, different booms with several attachments must be mastered for use with a wide variety of modern fixed-wing aircraft and helicopters. The new boomer must be able to inspect, test, modify and repair aircraft in-flight refueling systems and related hydraulic and electrical equipment.

Also, today's boomer must operate air refueling systems aboard the tanker aircraft in order to refuel other airborne craft. During this operation, he maintains radio contact with the pilot of the receiver aircraft and directs him into position for refueling. He also uses buttons, switches and levers on his control panel to extend and actually fly the boom which will connect the tanker and receiver.

At the same time, the boomer is monitoring panel lights to detect possible equipment malfunctions. It is important that he know how much fuel he can transfer through the boom pipe at any given time. This will depend on the capabilities of his system as well as the structural capacities of his receiving aircraft.



INTERIOR of refueling tanker is lined with storage tanks for up to 5,600 gallons of gas ready for refueling mission.

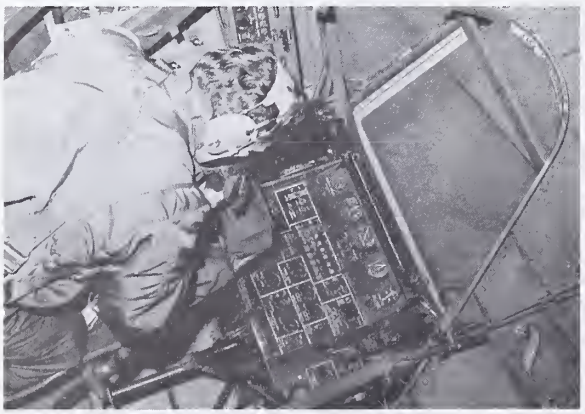


BOOMER inspects hydraulic pump in flying gas station. Pipe above his head provides path for transfer of fuel from tanks to receiver aircraft.

BOOMER'S eye view of F-106 Delta Dart during an air refueling mission.

BOOM operator performs maintenance (left) on a refueling nozzle. Standing in rear of a tanker (right), a person gets a view of the boom operator's compartment located in the lower, aft section of the aircraft. View shows pad he lays on and window for viewing refueling receiver aircraft.

PILOT'S view of A-37 aircraft being refueled in flight. (USAF photo).



KNEELING on his pad (left) above his viewing window, a Boomer starts his check list. Right, Boomer in position monitors his panel and check list, and watches the receiving aircraft during a mission. Pipe at top right of photo is path for fuel to the boom and receiving aircraft.

To reach the necessary level of proficiency to perform this operation, a young airman undergoes several weeks of academic and flight training at Randolph AFB, TX following basic training. He must learn everything there is to know about the airplane he will operate in, not just its refueling equipment. He also learns what the pilot, navigator and flight engineer do during flight because a refueling mission cannot be completed without a closely coordinated team effort by the entire crew. After schooling, the new boom technician may be assigned anywhere in the world that the Strategic Air Command has its fleets of air refueling tankers.

Young Dan Ellis stretched out on the boomer's pad in the tanker's tail and continued through the required refueling check list. He was coordinating with his pilot and engineer as well as with the pilot of the F-106 Delta Dart moving up below him. As the receiving aircraft moved closer to the tanker, Dan felt he could almost reach through his viewing window and touch the face of the pilot below. He was ever conscious of safety and emergency precautions since they were meeting in mid-air at speeds near 300 miles per hour. Also, the mission was being accomplished 20,000 feet above the miniature looking landscape.

Push this button. . .now. . . that one, Dan thought to himself. Have the fighter pilot move his craft over to the right. With his control panel and radio, Dan communicated with the receiver pilot and slowly began to fly the boom toward the open refueling hatch in the top back of the Delta Dart. Then. . . CONTACT! The planes were connected and fuel began to flow.

Yes, things had changed. And as young Dan Ellis headed for his post-flight debriefing, several thoughts came to mind. It didn't take long to go from a man with a gas can strapped to his back to an all jet "gas station" in the sky. Would Dan Ellis someday participate in the first air-to-air refueling at supersonic speeds? Or maybe conduct the first refueling mission in space?

Military pay scale effective October 1975

(Replaces pay scale in BASIC FACTS about MILITARY SERVICE, page 27 and BASIC FACTS centerfold wall chart)

PAY GRADE	YEARS OF SERVICE: UNDER 2	2	3	4	6	8	10	12	14	16	18	20	22	26
OFFICERS														
O-10	2841.00	2940.90	2940.90	2940.90	2940.90	3053.70	3053.70	3287.70*	3287.70*	3522.90*	3522.90*	3758.40*	3758.40*	3992.70*
O-9	2517.90	2584.20	2639.10	2639.10	2639.10	2706.00	2706.00	2818.20	2818.20	3053.70	3053.70	3287.70*	3287.70*	3522.90*
O-8	2280.60	2349.00	2404.80	2404.80	2404.80	2584.20	2584.20	2706.00	2706.00	2818.20	2940.90	3053.70	3176.10*	3176.10*
O-7	1894.80	2024.10	2024.10	2024.10	2114.40	2114.40	2237.40	2237.40	2349.00	2584.20	2761.80	2761.80	2761.80	2761.80
O-6	1404.60	1543.50	1644.00	1644.00	1644.00	1644.00	1644.00	1644.00	1699.80	1968.90	2069.70	2114.40	2237.40	2426.10
O-5	1123.20	1319.40	1410.30	1410.30	1410.30	1410.30	1453.50	1530.90	1633.20	1755.90	1856.70	1912.50	1979.70	1979.70
O-4	947.10	1152.60	1230.30	1230.30	1252.50	1308.30	1397.10	1476.00	1543.50	1610.70	1655.40	1655.40	1655.40	1655.40
O-3	880.20	983.70	1051.50	1163.70	1219.20	1263.30	1330.80	1397.10	1431.30	1431.30	1431.30	1431.30	1431.30	1431.30
O-2	767.10	838.20	1006.80	1040.40	1062 30	1062.30	1062.30	1062.30	1062.30	1062.30	1062.30	1062.30	1062.30	1062.30
O-1	666.00	693.30	838.20	838.20	838.20	838.20	838.20	838.20	838.20	838.20	838.20	838.20	838.20	838.20
OFFICERS WITH 4 YEARS' ENLISTED SERVICE														
O-3	0	0	0	1163.70	1219.20	1263.30	1330.80	1397.10	1453.50	1453.50	1453.50	1453.50	1453.50	1453.50
O-2	0	0	0	1040.40	1062.30	1095.90	1152.60	1197.30	1230.30	1230.30	1230.30	1230.30	1230.30	1230.30
O-1	0	0	0	838.20	894.90	928.20	961.80	995.40	1040.40	1040.40	1040.40	1040.40	1040.40	1040.40
WARRANT OFFICERS														
W-4	896.40	961.80	961.80	983.70	1028.70	1073.70	1118.70	1197.30	1252.50	1296.90	1330.80	1374.90	1420.80	1530.90
W-3	815.10	884.10	884.10	894.90	905.70	972.00	1028.70	1062.30	1095.90	1128.60	1163.70	1208.40	1252.50	1296.90
W-2	713.70	771.90	771 90	794.40	838.20	884.10	917.40	950.70	983.70	1018.20	1051.50	1084.80	1128.60	1128.60
W-1	594.60	681.90	681.90	738.60	771.90	805.50	838.20	872.70	905.70	939.30	972.00	1006.80	1006.80	1006.80
ENLISTEDS														
E-9	0	0	0	0	0	0	1018.50	1041.60	1065.30	1089.90	1113.90	1135.80	1195.80	1311.60
E-8	0	0	0	0	0	854.70	878.40	901.80	925.50	949.50	971.70	995.70	1053.90	1171.80
E-7	596.70	643.80	667.80	691.20	715.20	737.40	760.80	784.80	820.20	843.30	867.00	878.40	937.50	1053.90
E-6	515.40	561.90	585.30	609.60	632.70	656.10	679.80	715.20	737.40	760.80	772.80	772.80	772.80	772.80
E-5	452.40	492.60	516.30	538.80	573.90	597.30	621.30	643.80	656.10	656.10	656.10	656.10	656.10	656.10
E-4	435.00	459.30	486.00	524.10	544.50	544.50	544.50	544.50	544.50	544.50	544.50	544.50	544.50	544.50
E-3	418.20	441.30	459.00	477.00	477.00	477.00	477.00	477.00	477.00	477.00	477.00	477.00	477.00	477.00
E-2	402.60	402.60	402 60	402.60	402.60	402.60	402.60	402.60	402 60	402.60	402.60	402.60	402.60	402.60
E-1	361.20	361.20	361.20	361.20	361.20	361.20	361.20	361.20	361.20	361.20	361.20	361.20	361.20	361.20
E-1	361.20	0	0	0	0	0	0	0	0	0	0	0	0	0

BAQ

Pay Grade	No Kin	With Kin
E-1	$66.60	$116.10
E-2	70.80	116.10
E-3	80.10	116.10
E-4	90.30	134.40
E-5	102.60	153.60
E-6	106.20	166.20
E-7	115.80	178.80
E-8	135.00	190.80
E-9	144.90	204.00
W-1	137.40	178.20
W-2	151.80	192.60
W-3	172.20	212.40
W-4	191.10	230.40
O-1	120.60	156.90
O-2	153.60	194.70
O-3	175.50	216.60
O-4	198.00	238.80
O-5	219.60	264.60
O-6	234.60	286.20
O-7	255.30	319.20
O-8	255.30	319.20
O-9	255.30	319.20
O-10	255.30	319.20

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Officers: $53 05 per month.

Enlisteds:
When on leave or authorized to mess separately: $2.53 per day.
When rations in kind are not available: $2.85 per day.
When assigned to duty under emergency conditions where no U.S. messing facilities are available: $3.79 per day.
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THE CHART ABOVE shows what you now are earning per month as the result of the five percent pay boost ordered by President Ford. Actual pay for the top grades marked with an asterisk (*) is limited to $3150 monthly by Level V of the Executive Schedule. Except for that ceiling, the Chairman of the Joint Chiefs of Staff and the top officer in each service would earn $4405.50 a month.

The top enlisted in each service earns $1594.50 a month, regardless of cumulative years of service. The new Basic Allowance for Quarters and the new Basic Allowance for Subsistence are shown at right above.

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U.S. Coast Guard Beach Patrol

In the 186 year history of the U.S. Coast Guard, it has been called upon to perform a multitude of diverse missions. One of the more fascinating and unique was the World War II patrol of America's coastal beaches.

It was feared that Nazi spies or saboteurs might attempt to enter the U.S. by infiltrating through coastal areas. For this reason, the CG was tasked with the beach patrol mission of attempting to prevent such enemy action. The historically ancient but effective combination of men, horses and dogs was used as the means of accomplishing the mission.

The CG "cavalrymen" were highly trained and skilled horsemen. While they usually operated in pairs, individual and unit tactics were also practiced. These mounted sailors patrolled the lonely beaches and outposts of the U.S. coasts until the war ended. Then they and this unique chapter in history faded into obscurity.

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